



Office of Enforcement and Compliance Assurance (OECA) Project Summary Report

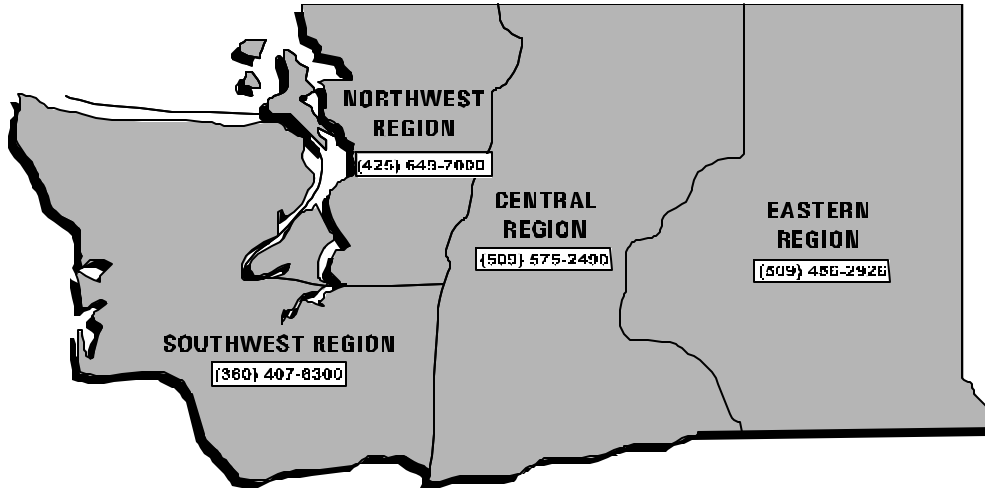
A Consolidated Overview Of "The Analysis Of Change In Generator
Compliance Using Regulatory Compliance Indicators"

Hazardous Waste and Toxics Reduction Program
April, 2002
Publication # 02-04-014

For additional copies of this document, please contact:

Department of Ecology
Publications
P.O. Box 47600
Olympia, WA 98504-7600
Please include your street address for UPS delivery

Or Visit Our Web Site at <http://www.ecy.wa.gov>



The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status or sexual orientation.

If you have special accommodation needs or require this document in an alternative format, please contact the Hazardous Waste and Toxics Reduction Program at (360) 407-6700 (voice) or (360) 407-6006 (TDD). Regional TDD numbers are:

CRO (TDD) (509) 454-7673
ERO (TDD) (509) 458-2055

NWRO (TDD) (425) 649-4259
SWRO (TDD) (360) 407-6306

Introduction

This report briefly summarizes and compares data collected for an EPA Office of Enforcement and Compliance Assurance (OECA) funded project entitled “Analysis of Change in Generator Compliance Using Regulatory Compliance Indicators”. Staff from the Washington State Department of Ecology’s Hazardous Waste and Toxic Reductions Program (HWTR) conducted a total of 265 compliance and technical assistance visits at a variety of hazardous waste generator types and sizes to gather data for this project. A more thorough presentation and discussion of the data points collected and identified during this project are given in the attached formal report.

The following three project goals were designed to compare site inspections, both technical assistance and compliance, with generator regulatory compliance over time.

- ❖ Establish a State-wide baseline quantitative measure of environmental compliance supported by specific regulatory violation categories that best represent actual or potential environmental threats. Chart One provides a baseline for environmental compliance for both large quantity generators (LQGs) and medium quantity generators (MQGs). Chart Two compares the percent and the general types of environmental threats between LQGs and MQGs. LQGs generate greater than 2,200 pounds of hazardous waste per month or batch; MQGs generate between 220 and 2,200 pounds per month or batch.
- ❖ Determine if a relationship exists between formal Compliance Enforcement Inspections (compliance inspections) and regulatory compliance by regulated facilities and if so, how it changes over time. Chart Three strongly suggests that non-compliance rates increase over time since the last inspection.
- ❖ Determine if there is a relationship between the effectiveness of technical assistance visits and the effectiveness of compliance visits on the compliance rate of small quantity generators (SQGs). This goal specifically focused on technical assistance visits in the form of increased generator contact (IGC) visits, conducted primarily at SQGs. Chart Five shows the rate of compliance for these IGC visits. SQGs generate less than 220 pounds of hazardous waste per month or batch.

Conclusion

The results of the project indicate that the HWTR staff can utilize inspection and compliance data to measure industry performance over time and to target technical assistance and regulatory compliance efforts. The data presented shows that reliable baseline quantitative measures of hazardous waste compliance have been established, and that a relationship appears to exist between compliance enforcement inspections and regulatory compliance (Project Goals One and Two). As for Project Goal Three, the data shows that SQGs (sites that generate small amounts of waste) appear to have a higher rate of compliance than MQG or LQG facilities. Though the SQG compliance rate is relatively high, a relationship of the effectiveness of the IGCs visits compared to the effectiveness of compliance inspections has not been clearly shown. A number of factors, including different levels of involvement by Moderate Risk Waste Programs (MRWs) and their localized impact on SQG compliance rates, may need to be taken into consideration when evaluating the effectiveness of technical assistance compliance visits

by Ecology. It is worthwhile to continue coordinating our future SQG technical assistance efforts, including IGCs, with regional MRWs.

In addition to providing a baseline information for future performance measures that link the work of the HWTR program with environmental outcomes, it also strengthens the conclusions stated in a previous publication titled “Compliance and Enforcement Summary Report” (Report), publication # 01-04-020, dated June, 2001. An electronic version of this publication is available at Ecology's HWTR Publication Internet site: <http://www.ecy.wa.gov/biblio/0104020.html>. Based on compliance data collected from the HWTR program databases between 1991 and 2000, this Report concludes that HWTR staff utilize compliance and enforcement data for measuring performance, targeting inspections, and/or linking technical assistance with compliance efforts. The Report highlights Ecology’s ongoing commitment to resolving environmental threats in the following ways.

- ❖ In 1996, Ecology developed a “Hitting the High Points” policy that focused on compliance indicator violations (i.e. environmental threats). Using this policy, compliance staff target inspections efforts on finding and resolving environmental threats, and spend less time at businesses that are managing wastes safely.
- ❖ The combination of increased field presence and targeted inspections results in an increase in environmental threats that are resolved.
- ❖ The number of environmental threats resolved by HWTR staff has increased 243 percent since 1991. The number of compliance inspections completed by HWTR staff has increased by 334 percent since 1991! Except for about a 10 percent drop during the last five years, the number of full-time compliance staff has remained fairly steady.

The HWTR program firmly believes that there is a clear advantage to using regulatory compliance indicator violations to target staff efforts towards finding and resolving real environmental problems. In turn, as violations are summarized and tracked via data bases, staff will be able to evaluate the value of technical assistance verses formal enforcement more effectively.

List Of Data Charts

Chart 1 — Percent Chance of Environmental Threat per Inspection - by Generator Type

Chart 2 — Percent and Type of Environmental Threats Found - by Generator Type

Chart 3 — Percent Chance of Environmental Threat vs Time Since Last Inspection

Chart 4 — Percent and Type of Environmental Threats vs Length of Time Since Last Inspection

Chart 5 — Percent Chance of Environmental Threat per Inspection - by Generator Type and Time Since Last Inspection

Chart 6 — IGC Data Compared to 1998 and MQG Data

NOTE: The titles and styles of these charts are different than those provided in the attached formal report, but they are based on the same data.

Chart One

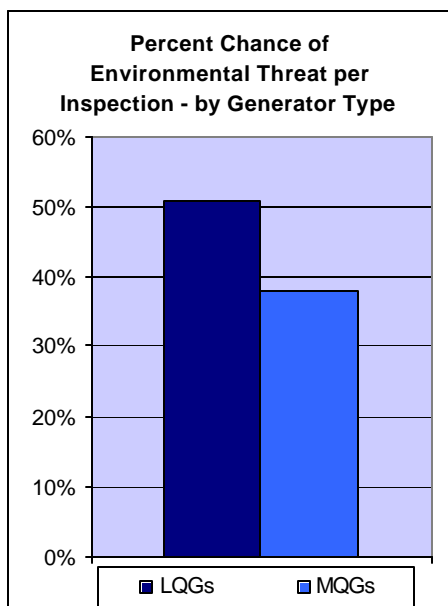
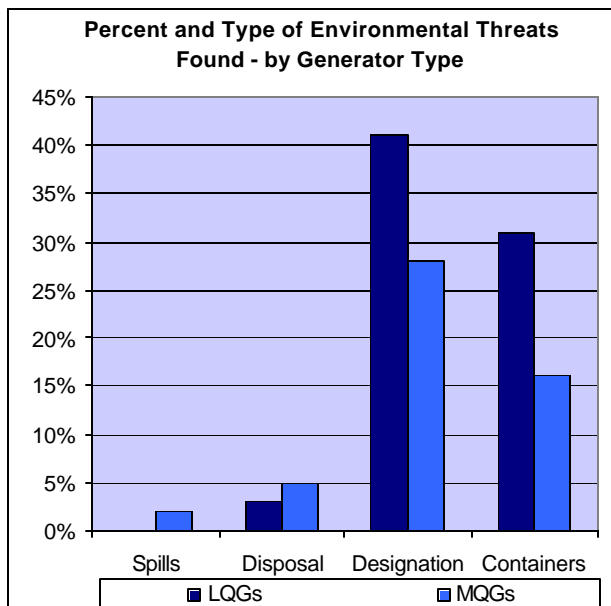


Chart Two



These charts indicate that a baseline can be established for environmental compliance using specific regulatory violation categories (Project Goal One). Individual baselines were established for both LQGs and MQGs. The four regulatory violation categories best represent actual and/or potential environmental threats.

- ❖ The regulatory violations were chosen for direct potential for adverse health/environmental threat, not for general paper accounting procedures. The four primary environmental threat categories are: 1) spills or releases to the environment; 2) improper disposal practices; 3) improper or lack of waste stream designation; and 4) serious container mis-management.
- ❖ The study found 38% of MQGs and 51% of LQGs had near-term environmental threat violations. Due to the higher tendency toward violations, HWTR staff should continue a schedule of frequent inspections and compliance follow-up for LQGs.
- ❖ Improper or lack of waste stream designation continues to be a primary compliance issue for LQGs and MQGs. Designation violations can affect a site's generator type in addition to being an environmental threat.
- ❖ Since violations of designation and container management regulations cause the most problems, HWTR staff may consider increasing technical assistance efforts in those areas. For example, HWTR might want to improve the distribution of new HWTR guidance for designation procedures.

The difference in the rate of compliance between LQGs and MQGs may be due to a difference in amount of hazardous waste being managed. Also, LQGs may come under a higher level of scrutiny by HWTR compliance inspectors due to the greater environmental threat associated with the greater amounts of hazardous waste.

Chart Three

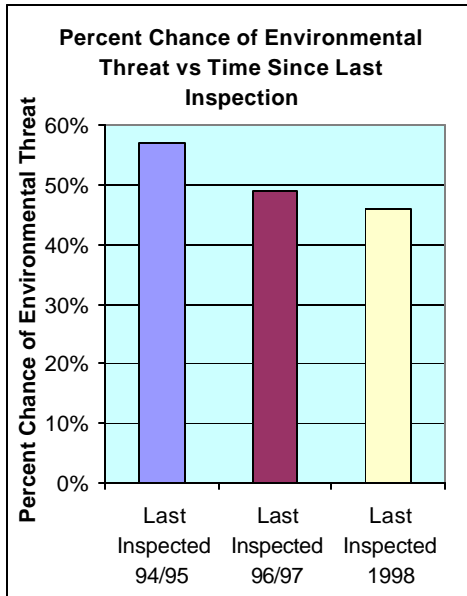
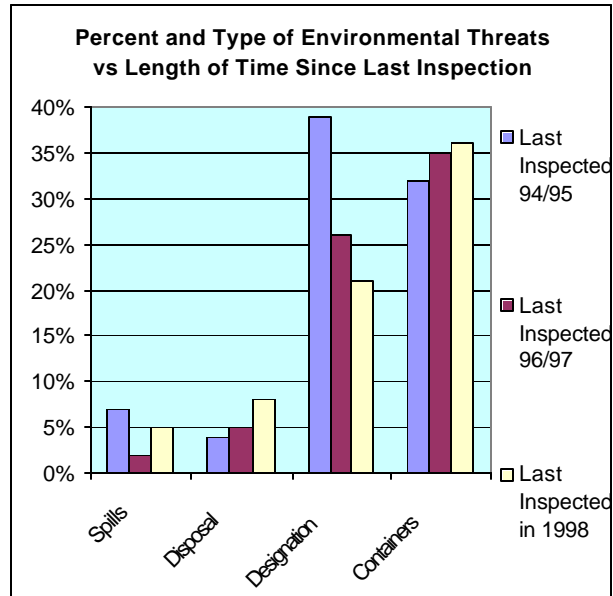


Chart Four

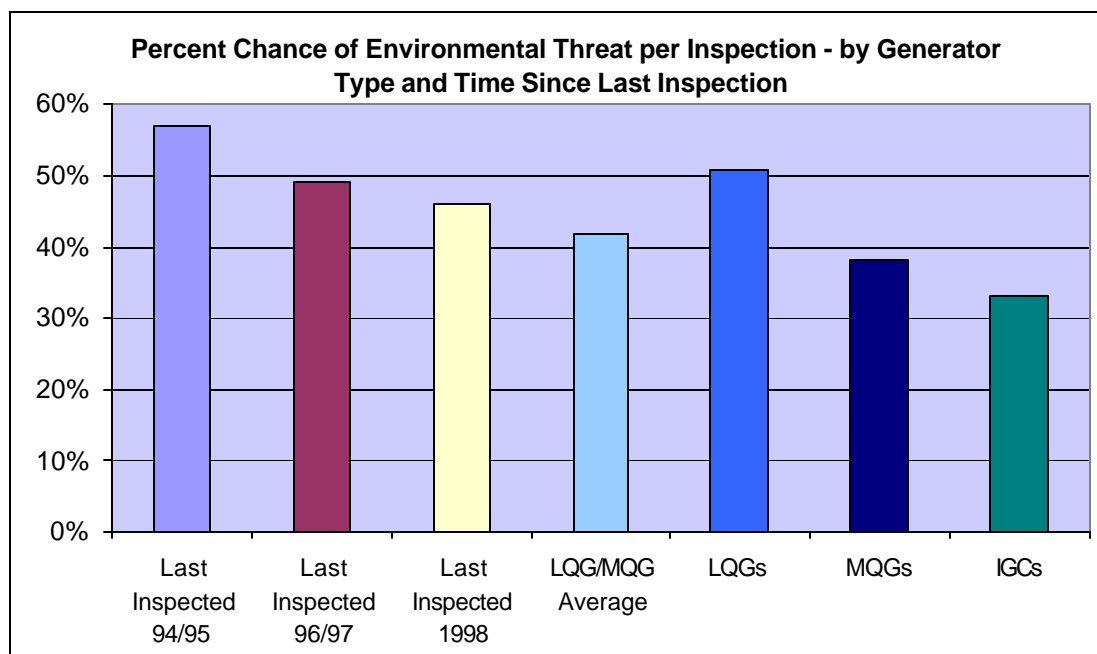


These charts show the relationship between compliance inspections and rate of compliance and then how that relationship changes over time (Project Goal Two). The data in these charts represent the combined compliance violations discovered at both LQGs and MQGs.

The data strongly suggests that the positive affects of compliance inspections of LQGs and MQGs tends to wear off over time. After about five years, non-compliance becomes more pronounced and the potential for environmental impact appears to increase.

- ❖ It is interesting to note that compliance with container management requirements do not significantly change over time, even when an inspection has been recently completed. One can speculate that container management violations are often the result of poor housekeeping which often occurs whether an inspection has been done recently or not.
- ❖ The rate of designation violations in Chart Four indicates a pronounced increase when there is greater time lapse between inspections. New or different hazardous substance use, new or different production process and/or a change in waste stream clean-out maintenance can cause a previous non-hazardous waste stream to become a hazardous waste stream. If proper designation procedures are not in place to review such changes, the new/changed waste stream may neither be properly counted, managed, nor disposed as a hazardous waste.

Chart Five



This chart compares information from Charts One and Three and introduces a weighted average baseline for LQG and MQG compliance. The generator types inspected over time consists of a random mix of LQGs and MQGs. Therefore, an LQG/MQG weighed average was calculated for comparative purposes. This chart also shows the rate of compliance for SQGs based on increased generator contact visits (IGCs) conducted as per Project Goal Three.

- ❖ The weighted average baseline calculation uses the relative percentages of all LQGs and the percentage of all MQGs. The specific LQG and MQG statistical indices from the original study were multiplied by the respective state-wide ratio of generator type to total regulated generators, 37% for LQGs and 63% for MQGs. The two fractions were then added together to give a weighted average. At the time of the original study there were 536 LQGs and 927 MQGs state-wide.
- ❖ It is interesting that the calculated LQG/MQG weighted average rate for compliance is better than the compliance rates for the random mix of generator types for the given inspection periods. This suggests that targeting for potential compliance problems has occurred by HWTR compliance inspectors. Also, facilities in these groups are also likely to have continuing compliance problems.
- ❖ The IGC visits were conducted over a broad geographic area in the Tacoma area at sites that had received technical assistance visits in 1998. Out of the 49 IGC visits, only 24 sites were generating small amounts of hazardous waste; and only the 24 sites were included in these data calculations. As Chart Five indicates, the rate of compliance for these SQG sites that received IGC visits parallels the MQG baseline. The types and percent chance of

environmental threats associated with SQGs are not shown on the charts in this summary, but do tend to mirror the MQG data given on Chart Four. Even though compliance rates for these SQGs are the best of any group studied, we are not convinced that it is due specifically to the IGC visits. It may be attributable to a number of other factors, including previous technical assistance visits from a local government agency. For example, the Pierce County Moderate Risk Waste (MRW) Program provides technical assistance outreach and hazardous waste disposal facilities to Tacoma's SQGs. SQG compliance rates may also be influenced by the relative ease of managing the small amounts of generated hazardous waste, especially compared to MQGs or LQGs.
